Please type a wiles sign (+) inside this box  Unger the Paper Reduction Act of 1995, no	+ persons are required		Fradem.	PTO/SB/21 (08-00) ved for use through 10/31/2002. OMB 0651-00 ark Office, U.S. DEPARTMENT OF COMMERC on unless it displays a valid OMB control number
TRANSMITTA	\L	Application Number		09/885,609.
FORM		Filing Date		Jun 20, 2001
(to be used for all correspondence after i	initial filing)	First Named Inventor	-	Mak, Alfred W.
		Group Art Unit		2812
		Examiner Name		Unassigned
Total Number of Pages in This Sub	mission	Attorney Docket Numb	oer	5351/AMI-00-12
	ENCLOSURES	(check all that apply)		
Fee Transmittal Form  Fee Attached  Amendment / Reply  After Final  Affidavits/declaration(s)  Extension of Time Request  Express Abandonment Request  Information Disclosure Statement  Certified Copy of Priority  Document(s)	CD, Nut	ng-related Papers to Convert to a nal Application of Attorney, Revocation of Correspondence		After Allowance Communication to Group Appeal Communication to Board of Appeals and Interferences Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) Proprietary Information Status Letter Other Enclosure(s) (please identify below).  1. Form 1449 with 59 references. 2. Return Receipt Postcard to Kenneth C. Brooks 3. Return Receipt Postcard to Applied Materials, Inc.
Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53  SIGNATI  Firm Law Office of Kenne		CANT, ATTORNEY, OR	AGE	NT

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	rrespondence is being deposited with the United sed to: Commissioner for Patents, Washington, D.		vith sufficient postage as first class 10/31/2001
Type or printed name	Jennifer Bonham		
Signature	Jank Men	Date	October 31, 2001

Signature

Date

October 31, 2001

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For:

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Group Art Unit: 2812: Examiner: Unassigned

RADEMA Filed: June 20, 2001

SYSTEM AND METHOD TO FORM A COMPOSITE FILM STACK

UTILIZING SEQUENTIAL DEPOSITION TECHNIQUES

## Second Supplemental Information Disclosure Statement

Hon. Commissioner for Patents Washington, D.C. 20231

Sir:

The following information is submitted in compliance with Applicants' duty of disclosure under 37 C.F.R. § 1.56. A copy of each reference recited below accompanies this document. Also enclosed are four (4) sheets of PTO form 1449 listing these references.

Patent Number	Inventor	Grant Date
4,058,430	Suntola et al.	15-Nov-77
4,389,973	Suntola et al.	28-Jun-83
4,413,022	Suntola et al.	1-Nov-83
4,767,494	Kobayashi et al.	30-Aug-88
4,806,321	Nishizawa et al.	21-Feb-89
4,840,921	Matsumoto	20-Jun-89
4,845,049	Sunakawa	4-Jul-89
4,859,627	Sunakawa	22-Aug-89
4,861,417	Mochizuki et al.	29-Aug-89
4,876,218	Pessa et al.	24-Oct-89

Patent Number	<u>Inventor</u>	Grant Date
4,993,357	Scholz	19-Feb-91
5,082,798	Arimoto	21-Jan-92
5,130,269	Kitahara et al.	14-Jul-92
5,166,092	Mochizuki et al.	24-Nov-92
5,225,366	Yoder	6-Jul-93
5,250,148	Nishizawa et al.	5-Oct-93
5,256,244	Ackerman	26-Oct-93
5,270,247	Sakuma et al.	14-Dec-93
5,278,435	Van Hove et al.	11-Jan-94
5,281,274	Yoder	25-Jan-94
5,290,748	Knuuttila et al.	1-Mar-94
5,294,286	Nishizawa et al.	15-Mar-94
5,300,186	Kitahara et al.	5-Apr-94
5,316,793	Wallace et al.	31-May-94
5,330,610	Eres et al.	19-Jul-94
5,336,324	Stall et al.	9-Aug-94
5,338,389	Nishizawa et al.	16-Aug-94
5,374,570	Nasu et al.	20-Dec-94
5,395,791	Cheng et al.	7-Mar-95
5,443,033	Nishizawa et al.	22-Aug-95
5,443,647	Aucoin et al.	22-Aug-95
5,458,084	Thorne et al.	17-Oct-95
5,480,818	Matsumoto et al.	2-Jan-96
5,484,664	Kitahara et al.	16-Jan-96
5,483,919	Yokoyama et al.	16-Jan-96
5,532,511	Nishizawa et al.	2-Jul-96
5,637,530	Gaines et al.	10-Jun-97
5,693,139	Nishizawa et al.	2-Dec-97

Patent Number	Inventor	Grant Date
5,705,224	Murota et al.	6-Jan-98
5,711,811	Suntola et al.	27-Jan-98
5,730,802	Ishizumi et al.	24-Mar-98
5,851,849	Comizzoli et al.	22-Dec-98
5,855,680	Soininen et al.	5-Jan-99
5,879,459	Gadgil et al.	9-Mar-99
5,916,365	Sherman	29-Jun-99
6,015,590	Suntola et al.	18-Jan-00
6,025,627	Forbes et al.	15-Feb-00
6,036,773	Wang et al.	14-Mar-00
6,043,177	Falconer et al.	28-Mar-00
6,113,977	Soininen et al.	5-Sep-00
6,124,158	Dautartas et al.	26-Sep-00
6,130,147	Major et al.	10-Oct-00
6,200,893	Sneh	12-Mar-01
EUROPE.	AN PATENT DOCUMENTS	
Patent Number	<u>Inventor</u>	Grant Date
EP0799641	Iiskola et al.	8-Oct-97
Ţ	PCT DOCUMENTS	
		Court Date
Patent Number	Inventor	Grant Date
199110510	Suntola et al.	25-Jul-91
199901595	Suntola et al.	14-Jan-99
199929924	Suntola et al.	17-Jun-99

Leskela et al.

200015865

23-Mar-00

## NON-PATENT DOCUMENTS

Klaus et al. <u>Automatically controlled growth of tungsten and tungsten nitride using</u> sequential surface reactions, Applied Surface Science, pp. 479-491 (2000).

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: BOX Patent Application, Commissioner

for Patents, Washington P.C. 20231

Signed: /// //// Typed Name: Jennifer Bonham

Date: 10.31 C\

Respectfully submitted,

Junto (Kreech)

Kenneth C. Brooks Reg. No. 38,393 TO TRADE

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INFORMATION DISCLOSURE

STATEMENT BY APPLICANT

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Sheet 1 of

Complete if Known					
Application Number	09/885,609				
Filing Date	06/20/2001				
First Named Inventor	Mak et al.				
Group Art Unit	2812				
Examiner Name	Unassigned				
Attorney Docket Number	5351/AMI-00-12				

				U.S. P	ATENT DOCUMEN	TS				
Examiner Initials*	Cite No.1	U.S. Patent [	Nocument Kind Code <sup>2</sup> (if known)		of Patentee or Applicant of Cited Document	Date of Put Cited Do MM-DD	cument -Y rYY		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
	Al	4,058,430		Sunto	la et al.	11-15-19	77			
	AJ	4,389,973	1		la et al.	06-28-19	983			
	AK	4,413,022		Sunto	la et al.	11-01-19	983			
	AL	4,767,494			ashi et al.	08-30-19				
	AM	4,806,321		Nishiz	awa et al.	02-21-19				
	AN	4,840,921		Matsu	ımoto	06-20-19	89			-
	AO	4,845,049	1	Sunal	awa	07-04-19	989			
	AP	4,859,627		Sunal	awa	08-22-19	989			
	AQ	4,861,417		Mochi	zuki et al.	08-29-19	989			
. <u>.</u>	AR	4,876,218		Pessa	et al.	10-24-19	989			
	AS	4,993,357		Schol	z	02-19-19	91	_		
	AT	5,082,798	<del>-</del> -	Arimo	to	01-21-19	92			
	AU	5,130,269		Kitaha	ara et al.	07-14-19	92			
	AV	5,166,092		Mochi	zuki et al.	11-24-19	92			
	AW	5,225,366		Yoder		07-06-19	93			
· · · · · · · · · · · · · · · · · · ·	AX	5,250,148		Nishiz	awa et al.	10-05-19	93			
	AY	5,256,244		Acker	man	10-26-19	93			
	AZ	5,270,247		Sakur	na et al.	12-14-19	93			
	BA	5,278,435		Van F	love et al.	01-11-19	94			
	ВВ	5,281,274		Yoder		01-25-19	94			
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Examiner Initials*	Cite No. <sup>1</sup>	Office <sup>2</sup> Num		Code <sup>5</sup> nBown)	Name of Patentee or A Cited Docume		Cited I	Document DO-YYYY	Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
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Signature	Considered	

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<sup>&</sup>lt;sup>1</sup>Unique citation designation number <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3) <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST 16 if possible <sup>5</sup>Applicant is to place a check mark here if English language Translation is attached.

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STATEMENT BY APPLICANT

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Application Number 09/885,609

Filing Date 06/20/2001

First Named Inventor Alfred W. Mak

Group Art Unit 2812

Examiner Name Unassigned

Attorney Docket Number 5351/AMI-00-12

(use as many sheets as necessary)

Sheet 2 of 4

				U.S. P.	ATENT DOCUMEN	TS			. •	
Examiner Initials*	Cite No.1	U.S. Patent Number	Document Kind Code <sup>2</sup> (if known)		of Patentee or Applicant of Cited Document	Date of Pub Cried Do MM-DD-	cument		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
	ВС	5,290,748		Knuut	tila et al.	03-01-19	94		rigures Appear	
<u> </u>	BD	5,294,286		Nishiz	awa et al.	03-15-19	94	-		
	BE	5,300,186		Kitaha	ra et al.	04-05-19	94			
·	BF	5,316,793		Walla	ce et al.	05-31-19	94			
	BG	5,330,610		Eres e	et al.	07-19-19	94	-		
	BH	5,336,324		Stall e	et al.	08-09-19	94		<del></del>	
	ВГ	5,338,389		Nishiz	awa et al.	08-16-19				
	BJ	5,374,570		Nasu		12-20-19	94			
	BK	5,395,791		Cheng	g et al.	03-07-19	1			
	BL	5,443,033		Nishiz	awa et al.	08-22-19	I	_		
	BM	5,443,647		Aucoi	n et al.	08-22-19	I			
	BN	5,458,084		Thorn	e et al.	10-17-19	95			
	ВО	5,480,818	1	Matsu	moto et al.	01-02-19	96			
	BP	5,484,664		Kitiha	Kitihara et al. Yokoyama et al.		01-16-1996 01-16-1996			
	BQ	5,483,919		Yokoy						
	BR	5,532,511		Nishiz	awa et al.	07-02-19				
	BS	5,637,530		Gaine	s et al.	06-10-19	97	_ <del>_</del> .		
	ВТ	5,693,139		Nishiz	Nishizawa et al. Murota et al.	12-02-1997 01-06-1998				
	BU	5,705,224		Murot						
	BV	5,711,811		Sunto	a et al.	01-27-19	98			
			F	OREIGN	PATENT DOCUM	ENTS				
Examiner Initials*	Cite No.1	· · ·		d Code <sup>5</sup> (nBown)	Name of Patentee or A Cited Docume		Date of Publ Cited Doc MM-DD-	ument	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
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<sup>&</sup>lt;sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>5</sup>Applicant is to place a check, mark here if English language Translation is attached.

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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3 4 of Sheet

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Application Number	09/885,609					
Filing Date	06/20/2001					
First Named Inventor	Alfred W. Mak					
Group Art Unit	2812					
Examiner Name	Unassigned					
Attorney Docket Number	5351/AMI-00-12					

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Examiner Initials*	Cite No.1		U.S. Patent Do	cument Kind Code <sup>2</sup> (if known)		of Patentee or Applicant of Cited Document	Date of Put Cited Do MM-DD	cument -Y /YY		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
	BW	5,730			1	ımi et al.	03-24-19				
	BX	5,851			Comi	zzoli et al.	12-22-19				
	BY	5,855				nen et al.	01-05-19				
	BZ	5,879	,459		Gadg	il et al.	03-09-19	199			
	CA	5,916			Sherr	nan	06-29-19				
	СВ	6,015			Sunto	la et al.	01-18-20	II			
	CC	6,025				es et al.	02-15-20	t t			
	CD	6,036	,773		Wang	et al.	03-14-20	i i			
	CE	6,043	,177		Falco	ner et al.	03-28-20	00			
	CF	6,113	,977		Soinir	nen et al.	09-05-20	00			
	CG	6,124	,158		Dauta	irtas et al.	09-26-20	00			
	СН	6,130	,147		Major	et al.	10-10-20	00			
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				Application Number	09/885,609	
INFORMATION DISCLOSURE				Filing Date	06/20/2001	
o št∕	ATEMENT BY	/ Al	PPLICANT	First Named Inventor	Alfred W. Mak	
M. O. S.				Group Art Unit	2812	
	(use as many sheets	s as n	ecessary)	Examiner Name	Unknown	
Sheet	4	of	4	Attorney Docket Number	5351/AMI-00-12	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS							
Examiner Initials*	Cite No.						
Klaus et al. Atomically controlled growth of tungsten and tungsten nitride using							
	СО	sequential surface reacions, Applied Surface Science, pp. 479-491(2000).					

Examiner	Date	
Signature	Considered	

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